

Listing of Claims

This listing of claims replaces all prior versions, and listings, of claims in the application:

Claims 1.-3. (Canceled)

4. (Previously Presented) A pellicle made by a process comprising:

fluorinating a surface of an already-formed polymeric film using a technique that increases fluorine atoms on the film surface while leaving the bulk unchanged,

wherein the fluorinated surface comprises a perfluorinated copolymer of tetrafluoroethylene and 2,2-dimethyl-1,3-dioxole, the copolymer perfluorinated to an extent characteristic of the pellicle film having been fluorinated after polymerization to eliminate hydrogen atoms from the polymer backbone in the fluorinated surface.

5. (Original) The pellicle polymer of claim 4, wherein the technique is selected from the group consisting of ion beam fluorination, plasma fluorination, atomic layer deposition, and remote plasma deposition.

Claims 6.-8. (Canceled)

9. (Previously Presented) The pellicle of claim 4, wherein the surface of the film is subjected, post formation of the film, to ion beam fluorination, plasma fluorination, atomic layer deposition, and/or remote plasma deposition to improve the film's optical properties, durability, and/or friction properties, wherein the optical properties, durability and/or friction properties are improved compared to a film that has not been subjected to ion beam fluorination, plasma fluorination, atomic layer deposition, and/or remote plasma deposition.

10. (Previously Presented) The pellicle of claim 9, wherein the optical properties and durability are improved at 157 nm compared to a film that has not been subjected to ion beam fluorination, plasma fluorination, atomic layer deposition, and/or remote plasma deposition.

11. (Currently Amended) A pellicle made by a process comprising fluorinating a surface of an amorphous fluoropolymer, post formation of the [[a]] pellicle from the amorphous fluoropolymer, by atomic layer deposition, wherein the surface of the amorphous fluoropolymer is fluorinated while leaving the bulk unchanged, and wherein the treated surface comprises a molecular layer that includes the reaction product of a monolayer of a first chemisorbed species and a second species.

12. (Previously Presented) The pellicle of claim 11, wherein the process results in the surface deposition of fluorine containing groups.

Claims 13.-15. (Canceled)

16. (Previously Presented) An apparatus comprising:
a polymeric pellicle film having a transmissivity suitable for lithography, the pellicle film comprising

a treated surface having a composition characteristic of exposure to a fluorinating process, and

a bulk having a composition characteristic of remaining unchanged by the fluorinating process,

wherein the treated surface comprises a perfluorinated copolymer of tetrafluoroethylene and 2,2-dimethyl-1,3-dioxole, the copolymer perfluorinated to an extent characteristic of the pellicle film having been fluorinated after polymerization to eliminate hydrogen atoms from the polymer backbone in the treated surface.

17. (Previously Presented) The apparatus of claim 16, wherein the treated surface has a composition characteristic of exposure to fluorinated ions.

18. (Previously Presented) The apparatus of claim 16, wherein the treated surface comprises implanted fluorinated species characteristic of plasma treatment with ions.

19. (Previously Presented) The apparatus of claim 16, wherein the treated surface comprises a molecular layer that includes the reaction product of a monolayer of a first chemisorbed species and a second species.

20. (Previously Presented) The apparatus of claim 19, wherein one of the first chemisorbed species and the second species comprises $\text{CFR}_1=\text{CR}_2\text{R}_3$, wherein each of R_1 , R_2 , and R_3 are, independent of one another, a fluorine atom or a monovalent fluorine-containing organic group, or wherein R_1 and R_2 form a bivalent fluorine containing organic group and R_3 is a fluorine atom or a monovalent fluorine containing organic group, or wherein R_2 and R_3 form a bivalent fluorine-containing organic group and R_1 is a fluorine atom or a monovalent fluorine-containing organic group.

21. (Currently Amended) The apparatus of claim 16, wherein the treated surface comprises a vapor deposited layer that is ~~largely~~ independent of the composition and surface properties of the bulk.

22. (Canceled)

23. (Currently Amended) The apparatus of claim 16, wherein the bulk of the pellicle film comprises an amorphous fluoropolymer.

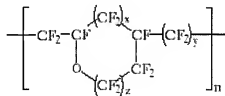
24. (Canceled)

25. (Previously Presented) An apparatus comprising:
a polymeric pellicle film having a transmissivity suitable for lithography, the pellicle film comprising an amorphous fluoropolymer that comprises

a treated surface having a composition characteristic of exposure to a fluorinating process, and

a bulk having a composition characteristic of remaining unchanged by the fluorinating process,

wherein the amorphous fluoropolymer comprises a polymer having the structure



26. (Previously Presented) The pellicle of claim 11, wherein one of the first chemisorbed species and the second species comprises $\text{CFR}_1=\text{CR}_2\text{R}_3$, wherein each of R_1 , R_2 , and R_3 are, independent of one another, a fluorine atom or a monovalent fluorine-containing organic group, or wherein R_1 and R_2 form a

bivalent fluorine containing organic group and R_3 is a fluorine atom or a monovalent fluorine containing organic group, or wherein R_2 and R_3 form a bivalent fluorine-containing organic group and R_1 is a fluorine atom or a monovalent fluorine-containing organic group.